Markets & Business

China's largest microchip maker opened the country's most advanced semiconductor manufacturing plant in October, launching China into the top ranks of the global chip-making industry. Semiconductor Manufacturing International Corp, founded in 2000 by a Taiwanese executive who spent 20 years at US chip maker Texas Instruments Inc, cut the ribbon on its fifth factory at a ceremony in Beijing.

The plant is China's first to process silicon wafers that are 300-mm in diameter, yielding more than twice as many chips as the 200mm generation wafers.

Only a handful of the world's largest global chip makers in the US, EU, Taiwan and Korea can afford the billion-dollar investments needed for 300mm fabs.

The International Monetary Fund is also one of the growing calls for China to float its currency immediately, a move that supporters say would help reduce the US trade deficit and strengthen the global economy. The IMF MD Rodrigo de Rath said that it would also be to China's advantage to uncouple the yuan from the dollar.

The tight link to US currency pegged at 8.28 yuan to the dollar has been blamed for making foreign goods too costly in China and Chinese exports unfairly inexpensive.

The IMF argues that a more flexible currency would also help tame inflation in China and cool its fast-growing economy. "Risks of overheating have not yet abated," said the report, which added that further monetary tightening would be aided "by greater exchange flexibility."

$8m resolution of a seven year classic lawsuit

Novellus Systems Inc has signed an agreement with the silicon equipment giant, Applied Materials, that settles all pending patent infringement claims between the companies, while reducing the prospect of future infringement lawsuits. The settlement agreement, which ends seven years of litigation between the two companies, is claimed to serves as validation of the Novellus IP portfolio, and it is claimed, allows the company to compete more freely in the marketplace with products and technologies that meet customers' needs.

Key terms of the agreement limit both parties' ability to sue each other, each other's customers, and in some instances, suppliers and distributors, for patent infringement in specific technology areas. For existing products, the covenant is binding for five years; for new products, the period is two years: and will be automatically extended for one additional year under certain circumstances.

Additional stipulations call for Applied Materials to make an $8m payment to Novellus, and release Novellus from all amounts owed or claimed to be owed from a settlement agreement dated May 4, 1997 regarding TEOS thin film deposition. The agreement further provides that the license under the TEOS Agreement is amended to be fully paid and royalty-free. Novellus expects that the royalty savings will represent a material positive impact on Novellus' earnings for the next several years.

"This agreement allows Novellus to focus its attention and resources where it matters most - creating value for our customers and shareholders," said executive VP, Dr Wilbert van den Hoek. "We're especially encouraged by its positive implications for our customers, who will now be able to make equipment purchase decisions on the basis of technical merit and productivity without concern about potential litigation."

The history of this litigation goes back to 1997, when Novellus was in the process of acquiring the Thin Film Systems division of Varian Associates. At that time, Applied Materials filed a patent infringement lawsuit against Varian (later adding Novellus to the suit) and Novellus responded with a lawsuit claiming that AM had infringed several patents that Novellus had acquired from Varian.

GaAs SI and the bulk wafer market

Strategy Analytics' annual report on the worldwide GaAs semi-insulating (SI) bulk wafer market, "*Markets for SI GaAs Substrates: 2003-2008,*" forecasts that the market will grow by 54% through to 2008. This follows growth of 43% between 2002 and 2003.

Japan and North America continue to host captive production of bulk wafers, accounting for 13% of the total market in 2003. The total world merchant market for GaAs SI bulk wafers market (merchant and captive) increased in area by 33% in 2003. The Asia-Pacific market will continue to be the fastest growing market, but overall demand in the region will be tempered as the foundry model struggles to gain a foothold in the GaAs semiconductor industry.

2003 was the crossover year for the 6" wafers, with major users in North America and Japan switching to larger diameter material. This in turn propelled demand and resulted in the market for 6" wafers growing by 79% in 2003.

"We've previously predicted that the bulk substrate market would become concentrated in the hands of two or three suppliers," said Asif Anwar, director, GaAs service. "Sumitomo Electric, Freiberger Compound Materials and Hitachi Cable grabbed 88% of the merchant market in 2003, leaving little room for other players."

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Nanometrics and Tokyo Electron combine

Nanometrics Inc and Tokyo Electron Limited TEL/Timbre group are to cooperate to deliver a fab-wide, production proven combination of hardware and software for the complete optical critical dimension process control 'scatterometry' solutions in semiconductor manufacturing processes.

The combined hardware and software platform offers complete flexibility and the fastest time-to-results to customers employing a standalone strategy, as well as those developing a fully integrated metrology strategy for advanced process control (APC).

Together, the applications resources of Nanometrics and TEL/Timbre offer extensive knowledge of all practical uses for optical scatterometry across a wide range of semiconductor processes and applications, and considerable expertise in the use of this technology for lithography and etch applications.

"Nanometrics production proven hardware technology, together with TEL/Timbre (ODP) software, offers the 'best-of-breed' process control metrology solution," said John Heaton, president and CEO of Nanometrics. "This combination excels at measuring, characterising and controlling the line-width, sidewall angle, height and profile of critical features on semiconductor devices and structures."

Optical digital profiling (ODP) translates diffracted, broadband light into accurate profiles of semiconductor device structures and their underlying films.

Unlike CD-SEMs and X-SEMs, which require a vacuum wafer environment and are generally destructive, optical scatterometry is fast, non-invasive, non-destructive and can be easily integrated into process tools.

Markets & Business

Matheson Tri-Gas Inc become the largest subsidiary of Taiyo Nippon Sanso Corporation after Nippon Sanso Corporation successfully completed its merger transaction with Taiyo Toyo Sanso. The new corporation is now Japan's largest and most influential industrial gas company. with 240 affiliated and subsidiary companies, over 7000 employees and a significant presence in 11 countries.

William J Kroll, chairman, president of Matheson Tri-Gas Inc will serve on the Board of Directors of Taiyo Nippon Sanso Corporation, where he said "We will have new opportunities to expand our product portfolio, as well as become a significant supplier of products to the new Taiyo Nippon Sanso Corporation."